

2024 Aluminium

Smiths High Performance



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Impressive Fatigue Resistance

2024 aluminium alloy finds use in market sectors such as motorsport, aerospace and defence.

2024 is a heat-treatable aluminium alloy, including copper as a primary alloying element.

Once formed, the alloy is heat-treatable to high strength levels. The material is highly suitable for applications requiring good fatigue resistance, high fracture toughness and resistance to fatigue crack growth. The alloy offers good strength and excellent toughness at moderately high strength levels. Our product offers higher strength when compared to 6061 aluminium but offers less versatility.

The material offers an impressive strength-to-weight ratio, reasonable machinability and good formability. The alloy is susceptible to the effects of corrosion and is often clad with pure aluminium or surface coated when corrosion resistance is required.

The alloy offers good malleability in the annealed condition and is more ductile than 7xxx series aluminium alloys. Thermal and electrical conductivity is also high. The alloy's strength-to-weight ratio is impressive compared to titanium and steel alloys which are heavier.



Applications:

- Engine components
- Pistons
- Braking systems
- Chassis skins
- Flywheels

Benefits:

- Impressive fatigue resistance
- High fracture toughness
- Resists fatigue crack growth
- High strength
- High electrical and thermal conductivity

About Smiths High Performance

Smiths High Performance is a leading stockholder and supplier of high-performance engineering materials. We are material supply chain partners supporting high-technology market sectors.

Further technical data available on the reverse of this Datasheet



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* Chemical Composition (weight, %)

	Al	Si	Fe	Cu	Mn	Mg	CR	Zn	Ti	Other
Min:	Bal			3.80	0.30	1.20				
Max:	Bal	0.50	0.50	4.90	0.90	1.80	0.10	0.25	0.15	0.15

* Properties as per BS EN 573-3

* Mechanical Properties

	Thicknesses Supplied	Tensile Strength (MPa)	Yield Strength (MPa)	Elongation (%)
O Sheet & Plate	0.010 - 0.499 (0.25 - 12.44)	220 max	140 max	12 min
T3 Flat Sheet	0.008 - 0.249 (0.203 - 6.32)	435 min	290 min	12 min
T351 Plate	0.250 - 4.000 (6.35 - 101.60)	435 min	290 min	12 min
T4 Coiled Sheet	0.010 - 0.125 (0.254 - 3.16)	425 min	275 min	12 min
T8 Flat Sheet	0.010 - 0.249 (0.254 - 6.32)	460 min	400 min	5 min
T851 Plate	0.250 - 1.499 (6.35 - 38.07)	460 min	400 min	5 min

* Properties as per BS EN 485-2, thickness 0.4-1.5mm

...where performance matters...

When you purchase high-performance materials from **Smiths High Performance**, you will join some of the biggest and best global engineering companies. We are a Tier 1 supply chain partner to the world's leading motorsport companies. Our unique business structure and ethos allow us to offer services otherwise unavailable in this market sector.

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